

Remarks

The Examiner rejected claims 1-4, 6-8, 14, 19, 22-24, 26-28, 34, 39, 56, 58 and 59 as unpatentable under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 4,765,173 issued to Schellstede in view of U.S. Patent No. 4,346,049 issued in the name of Brown. Reconsideration is requested.

All of the rejected claims, as amended herein, recite a tool with a fluid driven perforating device and a setting/pack off assembly and a control that non-electrically controls the operation of both the piercing member and the setting/pack off assembly. This arrangement permits the tool to be supported by tubing in stead of a wire line. This, in turn, provides a tool that accesses through the tubing an unlimited supply of treatment fluids at the surface and yet also allows a setting and packoff assembly to be controlled without an electric signal.

Thus, Applicant's invention provides a multi-function well treatment tool that is tubing conveyed and in which all the functions are mechanically, not electrically, controlled. This invention provides numerous advantages. In a squeeze operation, for example, after a perforation is made by the tool, a seal is mechanically activated using the tubing, and an unlimited volume of cement is then available to complete the treatment of the formation. All the functions of this tool can be operated mechanically through the supporting tubing or drill pipe.

Testing procedures can be conducted without pre-determined time limits or volume limits on the input or output. The operator can continue to monitor the product of a testing operation, for example, and manually control the operation of the tool in response to

the test results. Testing can be carried out at changing flowing chokes and rates. Similarly, stimulation procedures can be conducted without limits on fluid volume or time.

Because the tool is tubing supported, a pump truck can be utilized during stimulation and squeeze procedures. This allows the use of higher fluid pressures and volumes during the stimulation procedures.

The claimed tool allows the operator to carry out multiple procedures in one run and to modify the operation of the tool depending on the conditions encountered, such as variations in squeeze pressures and the volume of material being used. The entire action, timing and sequence of the operations carried out by the tool can be varied and controlled manually in response to changing downhole conditions as the various operations are performed. These features and advantages are not shown or suggested by any of the references of record.

Schellstede is purely a perforating tool intended mainly to overcome the shallow penetration and contamination of shaped charge perforations. It uses a high pressure water jet to make perforations extending into the formation to increase the flow of oil from the formation into the casing. The Schellstede tool can only perforate; it is not capable of doing squeeze or stimulation operations because there is no way to isolate the fluid path. There is no need for a seal in the Schellstede, so there is no motivation to add a seal mechanism.

With regard to claims 1, 22 and 56, the Examiner contends that the suggestion to combine the seal teaching from Brown with the perforating tool of Schellstede is found in the Brown patent. Specifically, the Examiner relies on the explanation at column 9, lines 52-64, of Brown relating to the function of the seal.

Applicant submits that this is not sufficient to support a prima facie showing of obviousness of the present invention as defined by the amended claims herein.

Brown shows a well treatment device that uses a shaped charge to perforate the casing. Since the shaped charge requires an electrical signal for initiation, the tool is supported by a wire line. See column 9, lines 46-60. The seal assembly in Brown is electrically controlled by a signal through the wire line. There is no teaching in Brown of how to control the seal assembly non-electrically, that is, without a wire line. Thus, there is no teaching of how to combine the seal from Brown in the perforating tool in Schellstede, which has no wire line.

Accordingly, withdrawal of the Section 103 rejection of claims 1, 22 and 56 respectfully is requested. Because claims 2-4, 6-8, 14, 19, 23-24, 26-28, 34 and 39 depend from one of these independent claims, these dependent claims likewise are allowable over Schellstede and Brown. Claims 58 and 59 have been cancelled.

The Examiner rejected claims 5 and 25 as unpatentable under 35 U.S.C. § 103 as being obvious over Schellstede in view of Brown. Reconsideration is requested.

Claim 5 depends from claim 1, and claim 25 depends from claim 22. As claims 1 and 22 are patentable, these dependent claims also are allowable. Withdrawal of the Section 103 rejection of claims 5 and 2, based on Schellstede and Brown is requested

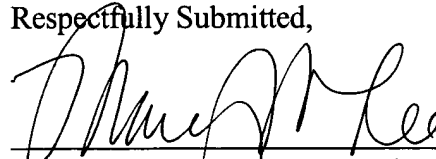
The Examiner's allowance of claim 48-55 is gratefully acknowledged by the Applicant. In addition, the Examiner indicated that claims 9-13, 15-18, 20, 21, 29-33, 35-38, 40, 41 and 57 contain allowable subject matter. Since the independent claims from which these claims depend are now allowable, this objection is moot.

Several amendments of a clarifying nature have been made to the claims.

No new matter is introduced by these changes.

Based on the foregoing, it is submitted that claims 1-41 and 48-57 are patentable over the references of record. A Notice of Allowance is courteously solicited. If the Examiner has any questions or comments concerning the instant application or this Amendment, the Examiner is invited to contact the undersigned.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Mary M. Lee', is written over a horizontal line.

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